LAND USE DESIGNATIONS AND OWNERSHIP

This "Land Use Designations and Ownership" document is a subsection of the "Delta Regional Ecosystem Restoration Implementation Plan (DRERIP)". The DRERIP is the Ecosystem Restoration Program (ERP) component of CALFED's Sacramento-San Joaquin Delta Regional Implementation Plan. The primary purpose of the DRERIP is to refine the set of scientifically-based actions to be taken in the Delta region that, given current knowledge, provide the basis for ecosystem restoration and to provide a plan for their implementation within a framework of adaptive management. The DRERIP includes the following information:

- Background – Scope and Basis for the Plan; Environmental Setting: Baseline, Existing Conditions, and Trends; and Ecosystem Restoration Projects to Date
- Delta Ecosystem Restoration Actions in an Adaptive Management Context
- Implementation
- Monitoring and Assessment

Within the DRERIP, the "Land Use Designations and Ownership" is a subsection of the "Environmental Setting" chapter, which includes information regarding the biological environment, flood control, non-native invasive species, food web, agriculture, water use, diversions and altered flow regimes, water quality, recreation, existing infrastructure, planned non-ecosystem projects, and climate warming and sea level changes.

The Sacramento-San Joaquin Delta falls under the jurisdiction of six counties: Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo (Figure 1.1). The Delta regional area, containing a portion of each of the six counties, is considered the Delta Ecological Management Zone (EMZ) (approximately 725,478 acres) by CALFED. The Delta EMZ is comprised of four CALFED Ecological Management Units (EMU): North Delta (approximately 236,641 acres), East Delta (approximately 99,145 acres), Central and West Delta (approximately 213,023 acres), and South Delta (approximately 176,669 acres) (Figure 1.1) (ERP Maps, ERPP, Volume 4, 2000). Figure 1.2 illustrates the Delta regional area which includes major highways and waterways.

The following describes the land uses designated by each of these counties as well as land coverage of the Delta EMZ. It also discusses land ownership (private, public, and non-governmental organizations) of the Delta EMZ.

1.0 DESIGNATED LAND USES

The following discussion is based on the land use elements contained within the General Plan for each county.

Each county has its own land use authority and, as such, has designated specific land uses. Figure 1.3 represents a compilation of those designated land uses for the Delta regional area which include Agriculture, Extensive Agriculture (Solano County), Open Space, Marsh (Solano County), Parks and Recreation, Delta Recreation and Resources (Contra Costa County), Urban and Commercial, Mineral (San Joaquin County), Water Management (Alameda County), Water; and Waste and Landfill. Land use designations are based individually on each county's land use maps; therefore, each county has a separate definition for their designations. Appendix 1 describes in detail how the designations were consolidated and how each land use was categorized.

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http://www.delta.dfg.ca.gov/erpdeltaplan/1.2.jpg

http://www.delta.dfg.ca.gov/erpdeltaplan/1.3.jpg

Table 1.1[1] shows the acreages and percentages of Agriculture, Open Space, Parks and Recreation, Urban and Commercial (Urban/Commercial), Waste/Landfill, and Water based on the total acreage within the Delta EMZ.

Table 1.1 Land Use Designation Acreage and the Percentage of the Designation in each Delta EMU

	Agriculture		Open Space		Parks and Recreation		Urban/ Commercial		Waste/ Landfill		Water			
EMU	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**	**TOTAL EMU Acreages**	**TOTAL % of the EMU in the Delta**
North	203,156	28	539	<1	2,870	<1	20,309	3	39	<1	9,728	1	**236,641**	**33**
East	68,787	9	61	<1	1,140	<1	18,275	3	765	<1	10,117	1	**99,145**	**14**
Central/West	105,320	15	3,342	<1	13,064	2	54,788	8	0	0	36,508	5	**213,023**	**29**
South	133,265	18	10	<1	764	<1	26,997	4	720	<1	14,911	2	**176,669**	**24**
Total Designation Contributes to the Delta	**510,529**	**70**	**3,952**	**<1**	**17,839**	**2**	**120,369**	**18**	**1,524**	**<1**	**71,265**	**9**	**725,478**	**100.0**

Appendix 2 shows land use designation acreages by county. The four Delta EMUs have portions of several different counties within their boundaries:

EMU	Alameda	Contra Costa	Sacramento	San Joaquin	Solano	Yolo
North			✓		✓	✓
East			✓	✓		
Central/West		✓	✓	✓	✓	
South	✓	✓		✓		

As discussed in Appendix 2, the highest percentage of land use designations for all of the counties within the Delta EMZ is agriculture at 70% (Figure A2.1). Urban/Commercial, at 18%, is the next highest designation. Open Space and Waste/Landfill (less than 1%) are the lowest in percentages for the counties' designations (Figure A2.1).

Six land use designations, illustrated in Figure 1.3, were compiled for the DRERIP and are described below (see Appendix 1 for how land uses were consolidated.)

Agriculture

The agriculture designation incorporates such activities as: row crops, orchards, dairies, vineyards, grazing, alfalfa, wineries, wind farms, feed mills (as well as storage and sales), rendering plants, feed stores, boarding and training horses, animal raising and sales, bed and breakfasts, ranchette housing, mining, and quarries. Some of these uses require approval of a land use permit. The "agriculture extensive" designation describes lands in Solano County that are not irrigated, consist primarily of rolling hills, and have a high probability for fires and floods. Therefore, these areas are primarily used for grazing (and are denoted on Figure 1.3 with hatch marks).

At 70%, the predominant land use designation in the Delta is "agriculture" (Table 1.1) with the largest percentage occurring in the North Delta EMU.

[1] County data digitized from six counties (Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo) land use maps. Due to the limitations of Arcview 3.2 and rounding, slight discrepancies occur when comparing EMU acreages to county acreages.

Urban/Commercial

Urban and Commercial (Urban/Commercial) consolidate the largest number of land use designations. Although, the counties consider these designations different, for the purposes of the DRERIP, they have been combined as Urban/Commercial. All industrial uses, commercial uses, residential uses, urban development, existing military, cemeteries, colleges, schools, fair grounds, etc. are included in the "urban/commercial" designation. The urban/commercial designation also includes mineral (San Joaquin County) and water management (Alameda County). Mineral refers to extractive resources such as sand, gravel, and natural gas. The water management land use designation for Alameda County permits sand and gravel quarries.

Seventeen percent (Table 1.1) of the Delta is designated as urban/commercial with the highest percentage occurring in the Central/West Delta EMU. Much of the urban development in the Delta is located in incorporated cities (Antioch, Brentwood, Isleton, Pittsburg, Rio Vista, Oakley, and Tracy are located entirely within the Delta EMZ; and Sacramento, Stockton, and West Sacramento are located partially within the Delta EMZ) and 11 unincorporated communities within the legal Delta (Discovery Bay, Bethel Island, Courtland, Freeport, Hood, Ryde, Walnut Grove, Byron, Terminous, Thornton, and Clarksburg).

Open Space

The six counties' open space and land use policies were developed to protect and set guidelines on remaining areas of open space land. With regards to open space and agricultural land use designations, the county policies typically protect the land from urbanization. These designations allow such activities as resource management, including maintenance of critical marsh and other endangered habitats or establishing "safety zones" around identified geologic hazards. Open space areas can be both publicly and/or privately owned. In San Joaquin County, golf courses and cemeteries are also allowed on these lands.

The "marsh" land use designation denotes lands in Solano County that are marsh and wetlands; however, this designation does not extend into the Delta EMZ. The only uses allowed are those that are compatible with the preservation of wildlife habitat, and have minimal effect on soil disturbance, erosion, and water pollution.

Open space represents the smallest percentage of designated land, less than 1% (Table 1.1). Open space lands are found in Contra Costa and Solano counties. One area of open space is marsh land located along the Sacramento Deep Water Ship Channel near Prospect Slough, and another area of marsh land is located near Collinsville, just outside the boundary of the Delta EMZ. Contra Costa County's open space lands are located on Bethel Island, along False River and Old River, the Antioch Dunes, and northwest of Pittsburg. Open space land use designations are also interspersed throughout urban communities.

Parks and Recreation

Parks and recreation allows many different uses and can be either publicly or privately owned. Such uses are land for public parks (county and regional), recreational uses, golf courses, commercial uses (snack bars and restaurants), boat docking, boat fueling and minor servicing, publicly owned commercial stables, schools and public buildings.

Within Contra Costa County the "Delta Recreational and Resources" designation incorporates the islands and adjacent lowlands of the San Joaquin-Sacramento Delta. Most of these areas are within the 100-year flood plain as mapped by the U.S. Federal Emergency Management Agency (FEMA). Many of the islands are currently in agricultural production. The County's General Plan encourages preservation of some of these islands as they are valuable to agriculture and wildlife. Hunting and fishing is allowed, assuming the activities preserve the long-term health of the Delta. Through the issuance of land use permits such activities as hunting clubs, campgrounds, shooting ranges, marinas, and outdoor recreational complexes are also allowed.

Land designated for park and recreational uses comprises 2% of the area and occurs in all six counties (Table 1.1). However, associated commercial industries are allowed within some of the park and recreation designated land use areas which mimic Urban/Commercial uses.

Waste/Landfill

"Waste/Landfill" are sites that are used for solid waste disposal. The South Delta EMU has the highest amount of acreage (although less than 1%) designated as Waste/Landfill (Table 1.1).

Water

The "water" designation refers to rivers, sloughs, and tracts within the Delta; however, in Sacramento County most waterways are designated "Natural Preserve". At 8% , "water" is the third highest land use designation in the Delta EMZ (Table 1.2), with 5% of that occurring in the Central/West Delta EMU (Table 1.1).

Primary and Secondary Zones (Delta Protection Commission)

The importance of protecting the Delta for agriculture, recreation and natural habitat is demonstrated by the establishment of the Delta Protection Commission (DPC) through passage of the Delta Protection Act of 1992 (Public Resources Code, Section 2180.22 et seq.). The Act was adopted into the Public Resources Code to protect the Delta from further encroachment by urban and suburban development. The Act also directs the DPC to prepare a comprehensive resource management plan for land uses within the Primary Zone of the Delta.

The Delta Protection Act of 1992 states, "The "Primary Zone" means the delta land and water area of primary state concern and statewide significance which is situated within the boundaries of the delta, as described in Section 12220 of the Water Code, but that is not within either the urban limit line or sphere of influence line of any local government's general plan or currently existing studies, as of January 1, 1992." (Figure 1.4)

The Delta Protection Act of 1992 states, "The "Secondary Zone" means the delta land and water area within the boundaries of the delta not included within the primary zone, subject to the land use authority of local government, and includes the land and water areas as shown on the map titled 'Delta Protection Zones' on file with the State Lands Commission."

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2.0 LAND COVER

This section of the document describes the land cover of the Delta regional area. Land cover for the Delta regional area is illustrated in Figure 2.1 and is based on the California Central Valley Wetlands and Riparian GIS (Wetlands GIS) (Ducks Unlimited for CDFG based on Landsat Imagery from 1993, map prepared 1998). Although, this map is based on habitats, for the purposes of this section, it is used to illustrate four types of land cover. Appendix 3 contains information on the Wetlands GIS and how it relates to the habitats of the CALFED documents, the ERPP (3 volumes) and the MSCS, and gives a brief description of the Wetlands GIS habitat category description.

The Wetlands GIS (Figure 2.1) contains fourteen categories of habitat that are grouped into four land cover categories: Natural Plant Communities, Agricultural Lands, Open Water and Urban/Commercial, as follows:

Natural Plant Communities[2]
- Grass
- Non-Riparian Woody
- Non-Tidal Flats
- Permanently Flooded Palustrine Emergents
- Riparian Woody
- Seasonally Flooded Palustrine Emergents
- Tidal Esturine Emergents

Agricultural Lands[2]
- Barren
- Flooded Agriculture
- Non-Flooded Agriculture
- Orchards/Vineyards
- Seasonally Flooded Agriculture

Urban/Commercial[2]
- Other

Open Water[2]
- Open Water

Table 2.1 shows the acreages[3] of the four different types of land cover broken down by Delta EMU.

Table 2.1 Acreage of Land Cover by Delta EMU

	Agricultural Lands		Natural Plant Communities		Urban / Commercial		Open Water		TOTAL EMU Acreage	TOTAL % of the EMU in the Delta
	Acres	%	Acres	%	Acres	%	Acres	%		
North	164,001	23	52,198	7	8,951	1	11,491	2	**236,641**	**33**
East	72,386	10	13,618	2	9,514	1	3,627	0	**99,145**	**14**
Central/West	125,581	17	41,458	6	11,124	2	34,860	5	**213,023**	**29**
South	119,641	16	42,406	6	8,702	1	5,920	1	**176,669**	**24**
TOTAL	**481,610**	**66**	**149,680**	**21**	**38,291**	**5**	**55,897**	**8**	**725,478**	**100**

At 66%, agriculture is the most predominant land cover in the Delta. Natural Plant Communities comprise 21%, Urban/Commercial 5%, and Open Water 8% of the remaining area in the Delta EMZ.

[2] Land cover types are based on habitat categories as described in Appendix 3.

[3] Due to the limitations of Arcview 3.2 and rounding, slight discrepancies occur when comparing EMU acreages. The acreage numbers have been adjusted between land cover estimates (Section 2) and land use designations (Section 1) for consistency.

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3.0 EXISTING LAND OWNERSHIP (PUBLIC, PRIVATE AND NON-GOVERNMENTAL ORGANIZATIONS)

Land ownership within the Delta consists of public (Federal, State, County, Special Districts and City), private, and non-governmental organizations (NGOs) (Figure 3.1[4]). For the purposes of this document, non-governmental organizations are private non-profit organizations that protect the environment. Figure 3.1 illustrates all public land ownership, various private ownerships (mostly land that is maintained for conservation purposes), and NGO's.

Lands maintained for conservation purposes are the focus of Sections 3.1 – 3.3. The land areas are publicly and privately owned and are also being managed for natural resource conservation purposes. Ecological reserves, wildlife areas, wildlife refuges, some state parks, mitigation/conservation bank sites, wildlife friendly agriculture, and land with conservation easements are examples of lands that have regulations requiring their management for resource conservation purposes.

Lands *not* maintained for conservation purposes are described in Appendix 4. Publicly owned lands which are not currently being managed for resource conservation purposes include parks, fairgrounds, golf courses, airports, disposal sites, and water treatment plants. Privately owned lands that are not strictly managed for resource conservation include marinas, golf courses, and country clubs. Appendix 4 contains tables showing these ownerships and their locations within the Delta EMUs.

Figure 3.1 shows lands maintained for conservation purposes as well as those not maintained for conservation purposes within the Delta. An overlay of the planned and existing urban areas is depicted with hash marks.

3.1 LANDS MANAGED FOR RESOURCE CONSERVATION

Definitions

As stated by the Fish and Game Code, year 2000 (Section 1584), "An **ecological reserve** means land or land and water areas that are designated as an ecological reserve by the commission pursuant to Section 1580 and that are to be preserved in a natural condition, or which are to be provided some level of protection as determined by the commission, for the benefit of the general public to observe native flora and fauna and for scientific study or research."

Wildlife Areas (State) and **National Wildlife Refuges** (Federal) are areas of land or water that are managed for the benefit of wildlife and native vegetation while also allowing public uses such as viewing and hunting wildlife.

State parks have various uses. Most allow picnicking, camping, and/or boat launching. The surrounding environment is kept in a natural state.

Mitigation and **conservation banks** are available as a means of compensating for "loss" of habitat usually resulting from development, through the purchase of "credits". The goal of the banks is to have no net loss of native habitat and resources. A mitigation bank refers to habitat types within wetland communities and a conservation bank is any habitat type that has special protections. For example, Kimball Island in the

[4] Multiple sources were used to obtain ownership information including: County GIS parcel data; AAA San Francisco Regional Map, 1999; Cosumnes River Preserve, The Nature Conservancy, 2001; Delorme Northern California Atlas and Gazetteer 4th Edition, 1998; California Department of Fish and Game Lands and Facilities Branch; Echo Maps Publishing Company 2000/2001; IBIS, Version 2.1, 2000; Stone Lakes National Wildlife Refuge Map, Teale Data Center-Govtowna, March 2001; Copyright 2001 Thomas Brothers Map (used with permission); USGS Topographical Maps; www.mapquest.com; www.topozone.com. Other sources include Management Plans and intradepartmental communications.

http://www.delta.dfg.ca.gov/erpdeltaplan/3.1.jpg

Central/West Delta EMU is owned by Wildlands Inc. It is an established wetland mitigation bank that allows developers to purchase credits which in turn, pays for the restoration of the island to a more natural, native state (CERES website).

Regulations

Federal, state, and local governments have developed regulations enabling restoration and/or protection of land in its natural and native state. This is accomplished through a **conservation easement** (CE). Land may be owned by one entity yet managed by another with specific restrictions on how the land is maintained and managed. For example, Wilkenson in the Cosumnes River Preserve is privately owned and TNC holds the CE. Skyraker in the Yolo Basin is also privately owned and DFG holds the CE. Each CE has different restrictions, but they are designed to stay with the land when the ownership changes.

A **fee title** (FT) designates who owns the land (i.e. The Nature Conservancy owns parcels of the Cosumnes River Preserve). However, there are no restrictions on use other than those imposed by the underlying governmental regulations and/or management plans.

The CEs allow long term planning and conservation by establishing regulations for the land. For the purposes of the DRERIP, the following identified lands (Tables 3.1 – 3.4), which hold conservation easements and/or fee titles, are regulated and managed for resource conservation.

3.2 LOCATIONS AND DESCRIPTIONS

The following land ownership parcel acreages and total Delta regional area acreage were calculated using GIS software (ArcView 3.2) and should be considered approximate. Acreages are approximate due to inherent measurement error in digital data capture methods used to produce the land ownership data layers[5]. Accurate acreages may be obtained on a parcel by parcel basis from ground surveys performed by the appropriate county's assessor office[6].

Figures 3.2 – 3.5 and Tables 3.1 – 3.4 (sources for the maps and tables are listed in footnote 4 on page 11) illustrate and itemize areas currently managed for habitat restoration/resource conservation within the four Delta EMUs. Land parcels shown in grey outside of the Legal Delta Boundary are areas managed for resource conservation but are not included in the total ownership acreages of the Delta. However, those parcels should be considered when regional planning occurs.

The conserved land areas are discussed below by EMU. The Wetlands GIS (Figure 2.1) was used to describe the habitat types of the land parcels (Appendix 3). Property with conservation easements is illustrated by ownership of the easement and not the owner of the fee title.

[5] Data capture methods include Global Position System (GPS) and digitizing. GPS uses a network of satellites to triangulate the location of the receiver. Standard GPS receivers can provide locations at accuracies of 5-10 meters. However, error in GPS location data can occur from signal degradation due to atmospheric effects, minor variations in the location of the satellites, inaccuracies in the timing clocks, errors in the receivers, and variations in the reflection of signals from local objects. Digitizing data capture can be accomplished through three different methods: 1) manual digitizing, 2) heads-up digitizing and vectorization, and 3) photogrammetry. Each of these methods involves digitizing vector objects from maps and other geographic data sources. Common measurement errors in digitizing include 1) over- and undershoots where line intersections are inexact, 2) invalid polygons which are topologically inconsistent because of omission of one or more lines or omission of tag data, and 3) sliver polygons, in which multiple digitizing of the interstices of adjacent polygons leads to the creation of an additional polygon (Longley et al, 2001).

[6] Ground surveying determines location by measuring angles and distances from other known points. Although ground surveying is very time consuming and expensive, is considered the most accurate method of obtaining location data (Longley et al, 2001).

North Delta EMU (Figure 3.2; Table 3.1)

The Vic FazioYolo Bypass Wildlife Area (DFG) (ID # 12) is located mostly in Yolo County in the north portion of the North Delta EMU. It has been restored to create permanent ponds and seasonal wetlands for wintering waterfowl. Of the remaining area in the Yolo Bypass, agriculture is managed for the benefit of wildlife. Yolo Bypass Wildlife Area contains Non-Flooded Agriculture and Grass as the main habitat types. It also has Seasonally Flooded Agriculture.

Liberty Island (TPL) (ID # 6), Prospect Island (USBR) (ID # 4) and Little Holland Tract (USACOE) (ID # 7) are located along the Sacramento Deep Water Channel and Cache Creek Slough. Liberty Island and Little Holland Tract have recently had their levees breeched.

Jepson Prairie (Solano Land Trust) (ID # 1) and Calhoun Cut Ecological Reserve (DFG) (ID # 2) are located on the west side of the North Delta EMU. They are being managed as ecological reserves. The Jepson Prairie Preserve is owned in title by the Solano Land Trust; however, TNC holds a conservation easement on the land. Habitats on Jepson Prairie are predominantly classified as Grass with a small portion of Seasonally Flooded Palustrine Emergents.

Stone Lakes National Wildlife Refuge (various private and public ownerships) (ID # 14, 15, 16, 17, 18, 21, 22, and 24) is located on the east side of the North Delta EMU. The Stone Lakes Final EIS proposed a Mitigated Preferred Alternative Boundary, which was approved by the USFWS in 1992. The Service does not own all of the land within the boundary. Although, already in existence within the boundary is a national wildlife refuge managed and owned by the Service. The primary habitat types are Grass and Non-Flooded Agriculture.

The Cosumnes River Preserve extends from east of the legal Delta through the North Delta and East Delta EMUs. It is owned by various entities (i.e. The Nature Conservancy, Bureau of Land Management, California Department of Water Resources, California Department of Fish and Game, and private) (ID # 23, 25, 26, 27, 28 and 29). The preserve is jointly managed by The Nature Conservancy and Bureau of Land Management and is the largest managed area for ecosystem restoration in the Delta. Other than the large portion of the Cosumnes River Preserve that is currently used for agriculture, habitats in the preserve are classified as Seasonally Flooded Palustrine Emergents, Riparian and Tidal Estuarine Emergents.

Table 3.1 shows currently conserved land areas in the North Delta EMU. The identification number (ID #) corresponds to the polygons in Figure 3.2 (CRP refers to property within the Cosumnes River Preserve).

East Delta EMU (Figure 3.3; Table 3.2)

The portion of the Cosumnes River Preserve that extends into the East Delta EMU primarily consists of Staten Island and McCormack-Williamson Tract (TNC) (ID # 2 and 3). Both islands are in agricultural production but are emphasizing "wildlife friendly" techniques. Staten Island is permanently protected by an easement for wildlife-friendly agriculture. CALFED provided funding for the purchases of these two land areas.

Tyler Island (NRCS and DFG) (ID # 1) is located west of Staten Island in Sacramento County. The conservation easement for Tyler Island is 75% controlled by NRCS and 25% controlled by DFG. It is primarily in agricultural production and its habitat is predominantly classified as Non-Flooded Agriculture.

White Slough Wildlife Area (DWR) (ID # 11) and the Phil and Marilyn Isenberg Sandhill Crane Reserve (Woodbridge Ecological Reserve) (DFG) (ID # 12) are in the center portion of the East Delta EMU. The majority of the White Slough Wildlife Area is open water. Grass is the next largest habitat type. The area also includes Non-Flooded Agriculture, Permanently Flooded Palustrine Emergents, and Seasonally Flooded Palustrine Emergents. The Phil and Marilyn Isenberg Sandhill Crane Reserve contains Non-Flooded Agriculture habitat and a few orchards.

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Table 3.1 North Delta EMU – Ownership of Conserved Areas					
ID #	**Property Name**	**CE**	**FT**	**Ownership[1]**	**Acreages[2]**
1	Jepson Prairie		✓	SLT	1,032
2	Calhoun Cut Ecological Reserve		✓	DFG	957
3	Miner Slough		✓	DFG	29
4	Prospect Island		✓	USBR	1,341
5	Cache Slough		✓	DWR	211
6	Liberty Island		✓	Trust for Public Lands	4,216
7	Little Holland Tract		✓	USACOE	1,677
8	Yolo Basin – CE	✓		DFG	149
9	Giant Garter Snake Mitigation Bank		✓	Wildlands Inc.	330
10	Yolo Bypass- Skyraker – CE	✓		DFG	347
11	H-Pond – CE	✓		USFWS	534
12	Channel Ranch – CE	✓		USFWS	133
13	Glide-In Ranch – CE	✓		USFWS	835
14	Bull Sprig Outing – CE	✓		USFWS	122
15	Senator Outing – CE	✓		DFG	460
16	Vic FazioYolo Bypass Wildlife Area		✓	DFG	15,845
17	Yolo Bypass Area	✓		NRCS	99
18	Bufferlands		✓	SRCSD	586
19	Sacramento County Flood Management Agreement with USFWS		✓	Sacramento County	63
20	Waste Treatment Plant		✓	Sacramento County	
21	Beach Lake Mitigation Bank		✓	CALTRANS	330
22	Stone Lakes		✓	USFWS	2,359
23	Stone Lakes		✓	DPR	1,106
24	Clarksburg Fishing Access		✓	WCB	7
25	Hood Test Screen Fish Facility		✓	DWR	150
25	Stone Lakes – Correia – CE	✓		USFWS	321
26	Stone Lakes		✓	BLM	86
27	Ragsdale -- CE (CRP)	✓		TNC	51
28	Stone Lakes		✓	DWR	448
29	Duane Martin -- CE (CRP)	✓		BLM	171
30	Machado -- CE (CRP)	✓		TNC	162
31	Fitzgerald (CRP)		✓	BLM	350
32	Krause (CRP)		✓	BLM	242
33	Cosumnes River Preserve (CRP)		✓	DU	258
34	Lost Slough		✓	DFG	235
35	Delta Meadows River Park		✓	DPR	444
36	Hogback Island		✓	WCB	10
TOTAL ACREAGE of Conserved Areas in the North Delta EMU					**35,696**

CE = Conservation Easement
FT = Fee Title

[1] See page iv for a list of acronyms

[2] Acreages are approximate due to inherent measurement error in digital data capture methods used to produce the land ownership data layers. See footnote 3 on page 11 for more detailed information.

Table 3.2 shows currently conserved land areas of the East Delta EMU. The identification number (ID #) corresponds to the property polygons in Figure 3.3 (CRP refers to property within the Cosumnes River Preserve).

Central/West Delta EMU (Figure 3.4; Table 3.3)

Brown's Island (Port of Stockton and EBRPD) (ID # 1 and 2) in Contra Costa County is located at the western-most end of the Legal Delta. The portion that EBRPD owns is a regional park. It does not have any facilities but is used by the public as a natural open park. The habitat type is entirely Permanently Flooded Palustrine Emergents.

Kimball Island (ID # 5) is a federally-authorized mitigation bank owned and managed by Wildlands, Inc. The predominant habitat type which is being restored/preserved is Permanently Flooded Palustrine Emergents.

The Lower Sherman Island Management Area (DFG) (ID # 3) is a flooded area in the western portion of Sacramento County. This is a wildlife area that is managed by DFG for waterfowl and recreation.

Sherman Island and Twitchell Island (DWR) (ID # 10 and 13) are located in Sacramento County between the Sacramento and San Joaquin Rivers. They are in agricultural production; however, DFG coordinates a hunting program on both of the islands.

Palm Tract Mitigation Area (DFG) (ID # 22) is located along the border of Contra Costa and San Joaquin Counties, a portion of which was established as a mitigation area. The remaining portion of the tract is in private ownership. One-tenth of the tract contains ponds established for waterfowl; the rest of the tract is used for agriculture with stipulations requiring that it be conducive to wildlife use.

Decker Island Wildlife Area (DFG) (ID # 11) and Brannan State Recreation Area (DPR) (ID # 12) are located just north of Sherman Island along the Sacramento River. Decker Island Wildlife Area is composed of a Grass habitat; although, a portion of the island is being restored to tidal wetland and upland habitat. Brannan State Recreation Area is open for camping, picnicking, and boat launching. The areas that are not used for recreation remain in a natural state. The dominant habitat type in Brannan State Park is Grass. Non-Flooded Agriculture covers the remaining portion of the area.

Franks Tract (DPR) (ID # 17) is completely submerged. It is in the center of the Central/West Delta EMU and is formed by False River and Old River. Hunting is allowed via special floating blinds which are placed in the tract and are only accessible by boat.

Medford Island is another DFG mitigation area (ID # 19); however, most of the island is currently privately owned. The mitigation area was established as a result of levee repair and maintenance impacts. The habitat types are Grass, Permanently Flooded Palustrine Emergents, and Non-Flooded Agriculture.

In the southern corner of the Central/West Delta EMU is the Byron Airport Conservation Easement (CE held by DFG) (ID # 23). It is in Contra Costa County west of Clifton Court Forebay. Grass is the predominant habitat type.

Table 3.3 shows currently conserved land areas in the Central/West Delta EMU. The identification number (ID #) corresponds with the property polygons in Figure 3.4.

http://www.delta.dfg.ca.gov/erpdeltaplan/3.3.jpg

Table 3.2 East Delta EMU – Ownership of Conserved Areas					
ID #	**Property Name**	**CE**	**FT**	**Ownership[1]**	**Acreages[2]**
1	Tyler Island -- CE	✓		NRCS and DFG	781
2	Staten Island (CRP)		✓	TNC	9,118
3	McCormack-Williamson (CRP)		✓	TNC	1,631
4	Fitzgerald (CRP)		✓	TNC	73
5	Crump (CRP)		✓	TNC	452
6	Crump (CRP)		✓	BLM	71
7	Flint/Desmond (CRP)		✓	Sacramento County	321
8	Nicolas (CRP)		✓	TNC	504
9	Grizzly Slough (CRP)		✓	DWR	436
10	Beacon Farms (CRP)		✓	TNC	235
11	White Slough Wildlife Area		✓	DWR	969
12	Phil and Marilyn Isenberg Sandhill Crane Reserve (Woodbridge Ecological Reserve)		✓	DFG	361
13	Wright Elmwood Tract CE Pace Preserve	✓		DFG	55
TOTAL ACREAGE of Conserved Areas in the East Delta EMU					**15,008**

CE = Conservation Easement
FT = Fee Title

[1] See page iv for a list of acronyms
[2]Acreages are approximate due to inherent measurement error in digital data capture methods used to produce the land ownership data layers. See footnote 3 on page 11 for more detailed information.

South Delta EMU (Figure 3.5; Table 3.4)

The Vernalis Riparian Habitat area (DFG) (ID # 2) is located along the San Joaquin River, within San Joaquin County, and near the southern portion of the South Delta EMU. It is an area that preserves natural riparian vegetation.

Table 3.4 shows currently conserved land areas in the South Delta EMU. The identification number (ID #) corresponds with the property polygons in Figure 3.5.

http://www.delta.dfg.ca.gov/erpdeltaplan/3.4.jpg

Table 3.3 Central/West Delta EMU – Ownership of Conserved Areas					
ID #	**Property Name**	**CE**	**FT**	**Ownership[1]**	**Acreages[2]**
1	Browns Island		✓	Port of Stockton	78
2	Browns Island		✓	EBRPD	596
3	Lower Sherman Island Management Area (shown with a dotted line)		✓	DFG	3,278
4	Dow Wetlands Preserve		✓	DOW	189
5	Kimball Island		✓	Wildlands Inc.	194
6	Antioch Dunes National Wildlife Refuge		✓	USFWS	67
7	Donlon Island		✓	Port of Stockton	300
8	Antioch Dunes Regional Shoreline		✓	USFWS	11
9	Big Break Regional Park		✓	EBRPD	17
10	Sherman Island		✓	DWR	10,118
11	Decker Island Wildlife Area		✓	DFG	43
12	Brannan Island (State Recreation Area)		✓	DPR	350
13	Twitchell Island		✓	DWR	2,988
14	Georgiana Slough		✓	Reclamation District 317	11
15	Empire Tract	✓		WCB	344
16	Webb Tract Berms		✓	DFG	6109
17	Franks Tract		✓	DPR	4,265
18	Mandeville Tip County Park		✓	Port of Stockton	85
19	Medford Island Mitigation Area		✓	DFG	274
20	East Rhode Island		✓	DFG	37
21	Acker Island		✓	DFG	17
22	Palm Tract Mitigation Area	✓		DFG	1,238
23	Byron Airport Conservation Easement	✓		DFG	354
24	Harvey Banks Pump Station		✓	DWR	2
TOTAL ACREAGE of Conserved Areas in the Central and West Delta EMU					**30,975**

CE = Conservation Easement
FT = Fee Title

[1] See page iv for a list of acronyms

[2] Acreages are approximate due to inherent measurement error in digital data capture methods used to produce the land ownership data layers. See footnote 3 on page 11 for more detailed information.

http://www.delta.dfg.ca.gov/erpdeltaplan/3.5.jpg

Table 3.4 South Delta EMU – Ownership of Conserved Areas					
ID #	**Property Name**	**CE**	**FT**	**Ownership[1]**	**Acreages[2]**
1	Dos Reis Fish Access		✓	DFG	11
2	Vernalis Riparian Habitat Site		✓	DFG	119
3	San Joaquin River Wildlife Area	✓		DFG	21
4	Durham Ferry State Recreation Area		✓	DPR	260
5	Tracy Hills (Chrisman Road CE)	✓		DFG	481
TOTAL ACREAGE of Conserved Areas in the South Delta EMU					**892**
CE = Conservation Easement FT = Fee Title					
[1] See page iv for a list of acronyms [2]Acreages are approximate due to inherent measurement error in digital data capture methods used to produce the land ownership data layers. See footnote 3 on page 11 for more detailed information.					

3.3 PUBLICLY OWNED LAND WITH UNKNOWN MANAGEMENT STATUS

Four publicly owned land areas with unknown management status have been identified. Three of the parcels occur in the North Delta EMU (Table 3.5). Land area A is a conservation easement owned by NRCS located near Cache Slough, west of Liberty Island. Land area B is owned by the Bureau of Reclamation and occurs near Delta Meadows, north of the Delta Cross Channel. Land Area C is owned by DWR and is east of McCormack Williamson. Land area D occurs in the South Delta EMU, near Lathrop, and is owned by the State Lands Commission (Table 3.5). Each of these land areas is represented on Figure 3.6 as an unknown management site.

Currently these areas are not included in the total acreages of land managed for resource conservation purposes.

Table 3.5 Publicly Owned Land with Unknown Management Status

Land Area	County	EMU	Figure	Ownership	Acreages
A	Solano (Conservation Easement)	North	Figure 2.2	NRCS	599
B	Sacramento	North	Figure 2.2	USBR	98
C	Sacramento	North	Figure 2.2	DWR	192
D	San Joaquin	South	Figure 2.5	SLC	101

http://www.delta.dfg.ca.gov/erpdeltaplan/3.6.jpg

4.0 LAND COVER AND CONSERVED LAND PARCELS

This section discusses the acreages of land cover types by conserved land ownership type (public and private). This discussion is based on the information presented in Section 2 (Land Cover Types) and Section 3 (Public and Private Ownership of Currently Conserved Areas).

Table 4.1 illustrates the amount of acreage by land cover type on publicly and privately conserved areas.

Table 4.1 Delta Wide Acreages of Land Cover

Ownership of Conserved Areas	Agriculture Lands		Natural Plant Communities		Urban/ Commercial		Open Water		Totals	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Public	33,735	41	21,612	26	494	< 1	8,854	11	**63,080**	**78**
Private	14,684	18	2,527	3	60	< 1	605	< 1	**17,876**	**22**
Total Acreages of Land Cover	**48,419**	**59**	**24,139**	**29**	**554**	**< 1**	**9,459**	**12**	**82,571**	**100**

There are 80,956 acres of land that are currently being conserved for natural resources representing 11% of the entire Delta EMZ. Of that amount conserved (82,571 acres), 58% is agriculture, 29% is natural plant communities, 12% is open water, and less than 1% is urban/commercial. When compared to the entire Delta EMZ (725, 605 acres), 6.7% is conserved in agriculture and 3.3% is conserved as natural plant communities. Please note that these acreages are GIS estimates and subject to the same constraints as discussed in Section 2.

North Delta EMU

Table 4.2 shows the GIS estimated acreages of the North Delta EMU.

Table 4.2 North Delta EMU Acreages of Land Cover

Ownership of Conserved Areas	Agriculture Lands		Natural Plant Communities		Urban/ Commercial		Open Water		Totals	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Public	13,444	16	14,974	18	298	< 1	1,963	2	**30,679**	**38**
Private	3,965	5	912	1	36	< 1	104	< 1	**5,017**	**6**
Total Acreages of Land Cover	**17,409**	**22**	**15,886**	**20**	**334**	**< 1**	**2,067**	**3**	**35,696**	**44**

The North Delta EMU has the highest amount of acreage managed for conservation purposes. In this EMU (44% of the Delta EMZ), 38% is in public ownership. Of the total acreage conserved, 22% is in agriculture and 20% is comprised of natural plant communities.

East Delta EMU

Table 4.3 shows the GIS estimated acreages for the East Delta EMU.

Table 4.3 East Delta EMU Acreages of Land Cover										
	Agriculture Lands		Natural Plant Communities		Urban/ Commercial		Open Water		Totals	
Ownership of Conserved Areas	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Public	2,347	3	518	< 1	2	< 1	128	< 1	**2,995**	**4**
Private	10,719	13	1,142	1	9	< 1	143	< 1	**12,013**	**15**
Total Acreages of Land Cover	**13,066**	**16**	**1,660**	**2**	**11**	**< 1**	**271**	**< 1**	**15,008**	**19**

Within the East Delta EMU, most (16%) of the conserved areas is in private ownership. Only 4% is in public ownership. The most abundant land cover type is agriculture at 16%. The other three land cover types make up the remaining 4%.

Central/West Delta EMU

Table 4.4 is the GIS estimated acreages of land cover types in the Central/West Delta EMU.

Table 4.4 Central/West Delta EMU Acreages of Land Cover										
	Agriculture Lands		Natural Plant Communities		Urban/ Commercial		Open Water		Totals	
Ownership of Conserved Areas	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Public	17,581	21	5,687	7	1,68	< 1	6,693	8	**28,514**	**36**
Private	0	0	473	< 1	15	< 1	358	< 1	**846**	**1**
Total Acreages of Land Cover	**17,581**	**21**	**6,160**	**7**	**183**	**< 1**	**7,051**	**9**	**29,360**	**37**

Agriculture is the predominant land cover, at 21%, of the Central/West Delta EMU. Open water (9%) and natural plant communities (7%) are the next highest. Urban/Commercial is less than one percent of the total. The Central/West Delta EMU's conserved areas are primarily in public ownership.

South Delta EMU

Table 4.5 contains the GIS estimated acreages of land cover within the South Delta EMU.

Table 4.5 South Delta EMU Acreages of Land Cover

Ownership of Conserved Areas	Agriculture Lands		Natural Plant Communities		Urban/ Commercial		Open Water		Totals	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Public	363	< 1	433	< 1	26	< 1	70	< 1	**892**	**1**
Private	0	0	0	0	0	0	0	0	**0**	**0**
Total Acreages of Land Cover	**363**	**< 1**	**433**	**< 1**	**26**	**< 1**	**70**	**< 1**	**892**	**1**

All of the conserved areas in the South Delta EMU are within public ownership. They only constitute 1% of the total conserved areas within the Delta. The land cover types are almost evenly divided between agriculture and natural plant communities, 363 acres and 433 acres, respectively.

Appendix 1 DESIGNATED LAND USE MAP DESCRIPTION

The Delta falls under the jurisdiction of six counties: San Joaquin (SJO), Sacramento (SAC), Yolo (YOL), Alameda (ALA), Contra Costa (COC), and Solano (SOL). Each county has its own land use authority and, as such, has designated specific land uses. Figure 1.2 of the "Delta Regional Area Land Use Designations and Ownership" represents a compilation of those designated land uses and was developed using the following steps.

In the first step, a composite map was prepared utilizing the land use designations specified by each county. In the second step, similar land use designations within each County were combined (Table A1.1). For example, in Solano County, the "urban/commercial" land use designation represents a combination of industrial, commercial, commercial recreation, public/semi-public, residential, and water dependent industrial designated land uses. Although the designation for "natural preserve" in Sacramento County has a portion of land which is actual land, the designation was combined with water since most of the designation symbolized the waterways.

Additional refinement occurred in the third step by combining the designations for each of the counties into one category (Table A1.2). For example, the "Agriculture" designation includes: agriculture-large parcel (ALA); agriculture-general, limited, and urban reserve (SJO); agricultural core and lands (COC); agriculture-intensive (SOL); and agricultural-cropland (SAC); and agriculture-general and preserve (YOL). (The italics denote those land use designations that are displayed as hatch marks on the map). These last groupings resulted in the six categories shown on Table A1.3 and described below.

Table A1.1 County General Plan Land Use Designations

Alameda (ALA)
Agriculture-Large Parcel
Parks-Major
Commercial (Urban)
    Major Public
Water Management

San Joaquin (SJO)
Agriculture-General
    Agriculture-Limited
    Agriculture-Urban Reserve
Urban/ Commercial
    Airport
    Cemetery
    Commercial
    Commercial-Community
    Commercial- Highway Service
    Commercial-General
    Commercial-Neighborhood
    Commercial-Offices
    Commercial-Recreation
    Commercial-Rural Services
    College
    Fair Grounds
    Fire Stations
    Golf
    Hospital
    Industrial
    Industrial-General
    Industrial-Limited
    Industrial-Truck Terminals
    Military
    New Community
    Prison
    Residential
    Residential-High Density
    Residential-Low Density
    Residential-Medium Density
    Residential-Very Low
    Residential-Rural
    School
Open Space
    Mineral
Parks
Resource Conservation
Waste
    Sewage
Water

Contra Costa (COC)
Agricultural Core
    Agricultural Lands
Delta Recreational and Resources
Landfill
Urban/ Commercial
    Light Industry
    Heavy Industry
    Local Commercial
    Oakley
    Office
    Mobile Home
    Multiple Family Residential-High
    Multiple Family Residential-Low
    Multiple Family Residential-Medium
    Multiple Family Residential-Very High
    Public/Semi-Public
    Rodeo
    Single Family Residential-High
    Single Family Residential-Low
    Single Family Residential-Medium
    Single Family Residential-Very High
    Woodranch
Natural Preserve (Open Space)
Parks and Recreation
Water
    Watershed

Solano (SOL)
Agriculture-Intensive
Agriculture-Extensive
Parks and Recreation
Urban/ Commercial
    Industrial-General
    Industrial-Limited
    Community Commercial
    Commercial Recreation
    Residential-High
    Residential-Low
    Residential-Medium
    Water Dependent Industrial
Open Space
    Marsh
Waste Disposal Site
Water

Sacramento (SAC)
Agricultural-Cropland
    Agricultural Cropland (Resource Conservation Area)
Urban/ Commercial
    Core Area
    Industry-Extensive
    Industry-Heavy
    Public
    Residential-Agriculture
    Residential-High Density
    Residential-Medium Density
    Residential-Low Density
    Urban Development Area
Natural Preserve
Recreation

Yolo (YOL)
Agriculture-General
Agriculture-Preserve
Parks and Recreation
Urban / Commercial
    Light Industry
    Heavy Industry
    Residential-One Family Zone
    Residential-One Family/Duplex Zone
    Residential-Multiple Family Zone
    Residential-Suburban Zone 1
    Residential-Suburban Zone 2
    Residential-Suburban Zone 3
    West Sacramento

Table A1.2 County Land Use Designations Combined	
Agriculture Agriculture- Large Parcel (ALA) Agriculture Core (COC) Agriculture- Cropland (SAC) Agriculture- General (SJO) Agriculture- Intensive (SOL) *Agriculture Extensive (SOL)* Agriculture- General (YOL) Agriculture- Preserve (YOL) Open Space Natural Preserve (COC) *Marsh ((SOL)*	Parks and Recreation Parks- Major (ALA) *Delta Recreational and Resources (COC)* Recreation (SAC) Parks (SJO) Urban/Commercial *Mineral (SJO)* *Water Management (ALA)* Waste/ Landfill Water Natural Preserve (SAC) Resource Conservation (SJO)

Table A1.3 Final Categories of the County Land Use Designations
Agriculture Agriculture Extensive (SOL) Open Space Marsh (SOL) Parks and Recreation Delta Recreation and Resources (COC) Urban/ Commercial Mineral (SJO) Water Management (ALA) Waste/ Landfill Water

Appendix 2 DESIGNATED LAND USE ACREAGES (BY PORTIONS OF THE COUNTIES WITHIN THE DELTA EMZ)

The acreages for the county land use designations were derived from the county land use maps. The maps were digitized and the acreages extracted using Arcview 3.2.

Table A2.1[7] shows the acreage and percentages of Agriculture, Open Space, Parks and Recreation, Urban/Commercial, Waste Landfill, and Water based on the portions of each county that are in the Delta EMZ.

Table A2.1 Land Use Designation Acreage (Portion of County within the Delta EMZ)

	Alameda		Contra Costa		Sacramento		San Joaquin		Solano		Yolo		**TOTAL**
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	**Acres**
Agriculture	4,271	89	28,574	27	88,344	75	233,995	74	77,985	88	77,360	85	**510,529**
Open Space	0	0	3,352	3	0	0	61	<1	539	<1	0	0	**3,952**
Parks and Recreation	0	0	2,831	3	13,779	12	1,133	<1	89	<1	7	<1	**17,839**
Urban/ Commercial	495	10	54,604	52	6,595	6	42,494	13	2,293	3	13,888	15	**120,369**
Waste/ Landfill	0	0	0	0	0	0	1,485	<1	39	<1	0	0	**1,524**
Water	36	1	15,748	15	9,822	8	38,362	12	7,297	8	0	0	**71,265**
Total Acres	**4,802**	100	**105,109**	100	**118,540**	100	**317,530**	100	**88,242**	100	**91,255**	100	**725,478**

Alameda County

The portion of Alameda County that occurs in the Delta is located in the South Delta EMU (Figure 1.1). These lands are primarily designated as agriculture with lesser amounts designated for Urban/Commercial uses and as water.

Table A2.2 Land Use Designation Acreage Based on Portion of EMU in Alameda County

	South Delta EMU	
	Acres	%
Agriculture	4,271	89
Open Space	0	0
Parks and Recreation	0	0
Urban/Commercial	495	10
Waste/Landfill	0	0
Water	36	1
Total Acres	**4,803**	**100**

[7] County data digitized from six counties (Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo) land use maps. Due to the limitations of Arcview 3.2, slight discrepancies occur when comparing EMU acreages to county acreages.

Contra Costa County

Portions of two Delta EMU's, Central and West Delta and South Delta (Figure 1.1) are located within Contra Costa County. Urban/Commercial (52%) and Agriculture (27%) are the primary land use designations. Other designations include Open Space, Parks and Recreation, Waste/Landfill, and Water (Table A2.1).

Table A2.3 Land Use Designation Acreage Based on Portion of EMU in Contra Costa County

	Central/West Delta EMU		South Delta EMU		**TOTAL**
	Acres	%	Acres	%	**Acres**
Agriculture	27,718	26	855	1	**28,574**
Open Space	3,343	3	10	<1	**3,352**
Parks and Recreation	2,586	2	247	0	**2,831**
Urban Commercial	52,563	50	2,040	2	**54,604**
Waste/Landfill	0	0	0	0	**0**
Water	13,255	13	2,492	2	**15,748**
Total Acres	**99,464**	**95**	**5,644**	**5**	**105,109**

Sacramento County

Portions of Sacramento County lie in three EMU's of the Delta EMZ: North Delta, East Delta, and Central and West Delta (Figure 1.1). Agriculture has the highest percentage with significantly lesser amounts designated for Parks and Recreation, Urban/Commercial, and Water (Table A2.4).

Table A2.4 Land Use Designation Acreage Based on Portion of EMU in Sacramento County

	North Delta EMU		East Delta EMU		Central/West Delta EMU		**TOTAL**
	Acres	%	Acres	%	Acres	%	**Acres**
Agriculture	48,533	41	20,237	17	19,590	17	88,344
Open Space	0	0	0	0	0	0	0
Parks and Recreation	2,862	2	525	0	10,388	9	13,779
Urban Commercial	6,304	5	285	0	0	0	6,595
Waste/Landfill	0	0	0	0	0	0	0
Water	5,064	4	2,199	2	2,552	2	9,822
Total Acres	**62,764**	**53**	**23,246**	**20**	**32,530**	**27**	**118,540**

San Joaquin County

Portions of San Joaquin County also lie in three Delta EMU's: East Delta, Central and West Delta, and South Delta (Figure 1.1). Collectively, 74% of the land use is designated as Agriculture. Urban/Commercial and Water have the next highest acreage with only minor amounts of land designated for Parks and Recreation and Waste/Landfill uses (Table A2.1).

Table A2.5 Land Use Designation Acreage Based on Portion of EMU in San Joaquin County							
	East Delta EMU		Central/West Delta EMU		South Delta EMU		**TOTAL**
	Acres	%	Acres	%	Acres	%	**Acres**
Agriculture	48,531	15	57,282	18	128,125	40	**233,995**
Open Space	61	0	0	0	0	0	**61**
Parks and Recreation	615	0	0	0	517	0	**1,133**
Urban Commercial	17,980	6	60	0	24,451	8	**42,494**
Waste/Landfill	763	0	0	0	11,802	4	**1,485**
Water	8,015	3	18,601	6	726	0	**38,362**
Total Acres	**75,966**	**24**	**75,943**	**24**	**165,621**	**52**	**317,530**

Solano County

Those portions of Solano County that occur in the Delta EMZ lie within the North Delta and Central and West Delta EMUs (Figure 1.1). In the Central and West Delta EMU, Water and Urban/Commercial constitute the major land use designations. However, in the North Delta EMU, Agriculture is the most predominant land use designation (Table A2.6). In both EMUs, there are small amounts of land designated as Waste/Landfill and Water.

Table A2.6 Land Use Designation Acreage Based on Portion of EMU in Solano County					
	North Delta EMU		Central/West Delta EMU		**TOTAL**
	Acres	%	Acres	%	**Acres**
Agriculture Intensive	68,426	83	0	0	**68,510**
Agriculture Extensive	8,843	11	717	13	**9,572**
Open Space (Marsh)	539	1	0	0	**540**
Parks and Recreation	0	0	89	2	**89**
Urban Commercial	109	<1	2,159	40	**2,271**
Waste/Landfill	39	<1	0	0	**39**
Water	4,757	6	2,458	45	**7,223**
Total Acres	**82,712**	**100**	**5,422**	**100**	**88,243**

Yolo County

Yolo County is only represented in the North Delta EMU (Figure 1.1) with 89% of it designated for agricultural uses. Smaller amounts are designated Urban/Commercial (10%) and Water (1%).

Table A2.7 Land Use Designation Acreage Based on Portion of EMU in Yolo County		
	North Delta EMU	
	Acres	%
Agriculture	77,360	85
Open Space	0	0
Parks and Recreation	7	<1
Urban/Commercial	13,888	15
Waste/Landfill	0	0
Water	0	0
Total Acres	**91,255**	**100**

Appendix 3 HABITAT MAP (GIS HABITAT INVENTORY)

Figure 2.1 is based on the California Central Valley Wetlands and Riparian GIS (Wetlands GIS) and is used to represent the habitat conditions for the Delta EMZ. It is also used to describe land cover types occurring in the Delta EMZ. The Wetlands GIS is based on 1993 satellite imagery. It is the most suitable source, of those that are available, for describing habitat/land cover types in the Delta EMZ. The mapping scale is appropriate for statewide and regional level planning, but lacks the level of accuracy needed for planning at the local level.

The Wetlands GIS contains fourteen categories of habitat types which are also considered land cover types in Sections 2 and 4. Following are brief descriptions of the fourteen land cover/habitat types (CDFG 1998).

- **Open Water.** Open water features (both fresh and salt water) that were identified on the summer image only.

- **Tidal Estuarine Emergents.** Wetland emergent vegetation identified within areas classified as Tidal by the San Francisco Estuary Institute Baylands Atlas data and classified as Estuarine by the National Wetlands Inventory. Examples of tidal emergents are pickleweed and saltgrass.

- **Seasonally Flooded Palustrine Emergents.*** Emergent vegetation is identified as a) dry (i.e. no flooding or moist soil) on the summer image, b) inundated on the winter image, and c) within areas classified as Palustrine, Lacustrine, or Riverine by the National Wetlands Inventory or outside of any areas classified as Estuarine by the National Wetlands Inventory. This class includes areas that were managed as moist soil habitat for waterfowl. Typical vegetation includes swamp timothy, pricklegrass, and watergrass.

- **Permanently Flooded Paulstrine Emergents.*** Wetland emergent vegetation identified as a) flooded or having moist soil on the summer image and thus assumed to also be flooded or moist in the winter, and b) within areas classified as Palustrine, Lacustrine, or Riverine by the National Wetlands Inventory or outside of any areas classified as Estuarine by the National Wetlands Inventory. Typical vegetation in this class includes bulrushes and cattails. Managed wetlands where summer water was visible were included in this class.

- **Non-Tidal Flats.** Mud banks and sand bars that were visible above the water level on the summer image and are not subject to tidal influence.

- **Flooded Agriculture.** Agricultural lands where standing water or very moist soil was present on both the winter and summer images. This includes immature rice fields where the rice plant was not yet fully emergent above the water on the summer image and was inundated on the winter image.

- **Seasonally Flooded Agriculture.** Agricultural lands where standing water was present on the winter image and growing crops were present on the summer image. Mature rice fields and other crops with winter flooding regimes were included in this class.

- **Non-Flooded Agriculture.** Agricultural lands with growing crops present in the summer and no flooding detected on either the summer or winter image. Row crops and other non-flooded agriculture were included in this class.

- **Orchards/Vineyards.** Orchards include almonds, walnuts, and various fruits grown in the agricultural areas of the Central Valley and in the valleys north of the Bay area. Vineyards are included in this class.

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* Managed areas labeled as seasonally or permanently flooded palustrine can vary in seasonality of flooding and geographic location and extent based on varying management schemes.

- **Riparian Woody.** Areas dominated by woody scrub/shrub vegetation and trees that are located within a riparian mask based on proximity to selected hydrography features from the CDFG Rivers Assessment data, NWI data, Natural Diversity Data Base (NDDB), and a hand-digitized floodplain map. The parameters used to define the mask were tailored to reflect differences in riparian forest habitats in three ecological regions found within the project area. These parameters are discussed in detail in Section 8 of the final project report.

- **Non-riparian Woody.** Areas dominated by woody scrub/shrub vegetation and trees that were not included in the Riparian Woody class. Residential areas with significant tree cover are included in this class.

- **Grass.** Includes managed grasslands, such as pasture, golf courses, and schoolyards, and natural grasslands such as those found in the foothills.

- **Barren.** Exposed soil with little or no vegetation present. This class includes fallow or recently plowed fields. Some barren land may have been classified as Other.

- **Other.** Includes areas of urban and suburban development, industrial complexes, commercial centers, airport runways, and other areas dominated by structures and paved surfaces. Some areas of development may have been classified as Barren.

In Section 3, Wetlands GIS is used to describe the habitat types of the conserved land parcels. However, the habitat classification system differs from that used by the ERPP which in turn, differs from that used by the MSCS. Table A3.1 is a crosswalk between the ERPP and MSCS habitat types pertinent to the Delta. This table is adapted from Table 15 of ERPP Volume I (CALFED 2000). Table A3.1 also indicates the relationship of the ERPP habitats to the mapping categories used in the Wetlands GIS (CDFG 1998).

Table A3.1 Relationship of ERPP Habitats in the Delta Regional Area to MSCS Habitats (Adapted from: CALFED (ERPP Vol. I) 2000) **and to California Central Valley Wetlands and Riparian GIS Map Categories**[1]		
California Central Valley Wetlands and Riparian GIS Map Category in which the ERPP Habitat generally is included:	**ERPP Habitat**	**MSCS/NCCP Habitat**
Open Water	**Tidal Perennial Aquatic**	Tidal Perennial Aquatic
Open Water	**Shoal**	Tidal Perennial Aquatic
Open Water	**Nontidal Perennial Aquatic (deep open water)**	Lacustrine
Open Water	**Nontidal Perennial Aquatic (shallow open water)**	Lacustrine
Open Water	**Delta Sloughs**	Tidal Perennial Aquatic
Permanently Flooded Palustrine Emergents , Riparian Woody, Grass	**Midchannel Islands**	Tidal Perennial Aquatic
		Valley Riverine Aquatic[2]
		Valley/Foothill Riparian[3]
		Tidal Freshwater Emergent
Permanently Flooded Palustrine Emergents	**Fresh Emergent Wetland (tidal)**	Tidal Freshwater Emergent
Permanently Flooded Palustrine Emergents	**Fresh Emergent Wetland (nontidal)**	Nontidal Freshwater Permanent Emergent
Seasonally Flooded Palustrine Emergents, Grass	**Seasonal Wetland**	Natural Seasonal Wetland
		Managed Seasonal Wetland
Riparian Woody	**Riparian and Riverine Aquatic**	Valley Riverine Aquatic
		Valley/Foothill Riparian
Grass, Other, Barren, Riparian Woody	**Inland Dune Scrub**	Inland Dune Scrub
Grass	**Perennial Grassland**	Grassland
Flooded Agriculture, Seasonally Flooded Agriculture, Non-Flooded Agriculture, Orchards/Vineyards	**Agricultural Lands**[4]	Upland Cropland
		Seasonally Flooded Agricultural Land
Open Water, Seasonally Flooded Palustrine Emergents, Permanently Flooded Palustrine Emergents, Riparian Woody	**Freshwater Fish Habitat**	none[5]
Open Water, Seasonally Flooded Palustrine Emergents, Permanently Flooded Palustrine Emergents, Riparian Woody	**Essential Fish Habitat**	none[5]

[1]This table is not designed to show the relationship of MSCS habitats to California Central Valley Wetlands and Riparian GIS Map Categories.

[2]The MSCS does not relate Valley Riverine Aquatic habitat to Midchannel Islands—perhaps because the MSCS specifies that Valley Riverine Aquatic habitat does not include tidally influenced areas. Although the Midchannel Islands are in tidal areas, some of them support woody riparian species and the associated shaded riverine aquatic habitat.

[3]The MSCS does not specifically relate Valley/Foothill Riparian habitat to the ERPP Riparian and Riverine Aquatic habitat. However, riparian vegetation is present on some Midchannel Islands.

[4]The ERPP uses the term "Agricultural Lands" and the term "Wildlife Friendly Agricultural Land." For the purposes of comparison in Table 11.4.1, the term "Agricultural Lands," as used here in the DRERIP, assumes the management features prescribed in the DRERIP for Wildlife Friendly Agricultural Land are not undertaken on agricultural lands and that this ERPP classification encompasses the Upland Cropland and Seasonally Flooded Agricultural Land designations in the MSCS. Whenever the management features prescribed in the DRERIP are committed to in perpetuity to be undertaken on agricultural lands they will be defined as "Wildlife Friendly Agricultural Land."

[5]The MSCS addresses the dynamic environmental factors that are important to fish in the "NCCP Fish Groups" section of the MSCS, rather than in its "NCCP Habitats" section.

Appendix 4.0 ADDITIONAL PUBLIC LAND OWNERSHIP

Tables A4.1 – A4.4 show the areas within the Legal Delta that are also in public ownership based on EMU. The land is not currently regulated for resource conservation purposes. Figure A4.1 illustrates the location of the areas by EMU. Tables A4.1 – A4.4 show the ownership and the appropriate ID# for Figures A4.1 – A4.4.

http://www.delta.dfg.ca.gov/erpdeltaplan/A4.1.jpg

Table A4.1 North Delta EMU – Other Public Land Ownership		
ID #	**Other Public Land Ownership**	**Ownership**
1	County Landfill	Solano County
2	US Naval Reservation	US Navy
3	Dredge Disposal Site	City of Dixon
4	Wastewater Treatment Plant	City of Dixon
5	Sacramento Bypass Wildlife Area	DWR
6	CHP Training Center	California Highway Patrol
7	US Postal Service	US Postal Service
8	Lake Washington	Port of Sacramento
9	Lighthouse Golf Course	City of West Sacramento
10	Yolo County Park	Yolo County
11	Miller Park	City of Sacramento
12	Lock Operation Center	USACE
13	William Land Golf Course and Park	City of Sacramento
14	Bing Maloney Golf Course	City of Sacramento
15	Cavanaugh Golf Course	City of Sacramento
16	Valley-Hi Golf Course	City of Sacramento
17	Franklin Airport/ Cosumnes Correctional Facility	Sacramento County
18	Retired Dump Site	US Army
19	City of Rio Vista Municipal Airport	City of Rio Vista
20	Dredge Disposal Site	DWR

http://www.delta.dfg.ca.gov/erpdeltaplan/A4.2.jpg

Table A4.2 East Delta EMU – Other Public Land Ownership

ID#	Other Public Land Ownership	Ownership
1	French Camp Landfill	City of Stockton
2	Van Buskirk Municipal Golf Course	City of Stockton
3	Harbor	Port of Stockton
4	Lions Golf Course	City of Stockton
5	Louis Park	City of Stockton
6	Stockton Country Club	SJO County
7	Brookside Country Club	City of Stockton
8	Buckley Park	City of Stockton
9	Grupe Park	City of Stockton
10	North Water Quality Control Plant	City of Stockton
11	Sewage Treatment Plant	City of Isleton
12	White Slough Water Pollution Control Plant	City of Lodi
13	Oak Grove Regional Park	SJO County
14	Swenson's Golf Course	City of Stockton
15	Venetian Gardens Golf Course	City of Stockton
16	Oakmore Golf Course	City of Stockton
17	Fairgrounds – SJO County	SJO County

http://www.delta.dfg.ca.gov/erpdeltaplan/A4.3.jpg

Table A4.3 Central and West Delta EMU – Other Public Land Ownership		
ID #	**Other Public Land Ownership**	**Ownership**
1	Contra Costa Fairgrounds	Contra Costa County
2	SMUD (Utility District)	SMUD
3	Rio Vista Dredge Disposal	City of Rio Vista
4	Sandy Beach State Park	Solano County
5	Port of Stockton (all except for the Habitat Enhancement Project)	Port of Stockton
6	Jersey Island	Ironhouse Sanitary District
7	Sunset Park and Ballfield	City of Brentwood
8	Contra Costa Byron Airport	Contra Costa County

http://www.delta.dfg.ca.gov/erpdeltaplan/A4.4.jpg

Table A4.4 South Delta EMU – Other Public Land Ownership		
ID#	**Other Public Land Ownership**	**Ownership**
1	Tracy Pumping Plant	USBR
2	Rough n' Ready Island	Port of Stockton
3	Regional Waste Water Treatment Plant	City of Stockton
4	Deuel Vocational Institute	SLC
5	Defense Depot, Tracy	US Army
6	Tracy Airport	City of Tracy

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